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THE CONSERVATIVE TREATMENT OF FIBROID TUMORS BY MYOMECTOMY.

presented

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The operative treatment of fibroid tumors has developed through several stages. In the beginning the removal of the tumor only was attempted. This method of operation was employed because it was considered the simplest and safest, and not from motives of conservatism. At a later date the uterus was removed together with the tumor or tumors, because it was believed to be a safer method of operation than the removal of the tumors alone. Still later the removal of the ovaries was employed to bring about the artificial menopause, and thus promote the involution of the tumor. This method was employed also upon the ground of the relative safety of the procedure.

In the development of the technique of these methods of operation the advantages of hysterectomy over the removal of the ovaries have become manifest, and this is the usual method of election. In a certain class of cases it has been demonstrated that the removal of the tumor itself (myomectomy) is a safer operation than the removal of the uterus with the tumor or tumors (hysterectomy). In the recent past true conservatism—that is, the welfare of the patient—has required the selection of one or other of

these methods of operation, depending upon the nature of the case. The technical details of operation for fibroids have been so perfected, and the safety of these operations has been so greatly increased, within the past few years that it has become possible to advance conservatism a step forward, and to view the removal of fibroid tumors from a higher standpoint. Undoubtedly the ideal method of treatment of fibroid tumors is to remove the tumors while retaining the organs of generation and the functions of menstruation and procreation. This must be accomplished by broadening the field of myomectomy and restricting that of hysterectomy. The object of this paper is to discuss the present status of myomectomy, and to advocate such changes in practise as will render this conservative operation applicable in many cases in which it is now necessary to resort to hysterectomy.

The first myomectomy was performed by Amussat (Memoir upon the Pathological Anatomy of Fibrous Tumors of the Uterus, etc., Paris, 1842) June 11, 1840. The tumor was a submucous fibroid in the early stages of the process of being extruded from the uterus by the contractions of that organ. Amussat performed his second operation in 1841 (*loc. cit.*, p. 41). Both tumors were removed *per vaginam*. They were not only the first myomectomies, but aside from the removal of fibroid tumors which had become polypoid and extruded into the vagina, they were the first fibroid tumors to be removed. In these operations there was no question of conservatism in the modern sense of the

term. Myomectomy was performed instead of hysterectomy simply on the ground of the relative safety of the two operations; hysterectomy was yet unborn.

Washington L. Atlee was the next surgeon to perform myomectomy, and the first to systematically and continuously advocate the removal of these tumors upon scientific grounds. Atlee's first myomectomy appears to have been done for a pedunculated fibroid tumor, which was removed by celiotomy August 28, 1844, with a diagnosis of ovarian tumor. This diagnosis was corrected at the autopsy several years subsequently, when both ovaries were found *in situ* (Atlee, Ovarian Tumors, p. 249).

Atlee's first myomectomy performed *per vaginam* is recorded in his prize essay (The Surgical Treatment of Certain Fibrous Tumors, etc., *Trans. Amer. Med. Assoc.*, 1853, p. 559). The operation was begun May 8, 1845. The tumor was removed piecemeal at different times. The patient died July 16 of pneumonia. Atlee continued to operate *per vaginam* and by abdominal section, and in 1853 reported fourteen cases (*loc. cit.*). A study of Atlee's very full report of these cases is most interesting, and serves to increase one's respect for this great man, who was even more a pioneer in the surgical treatment of fibroid tumors than in ovariotomy.

It is beyond the scope of this paper to refer to numerous surgeons who advanced the operative treatment of fibroid tumors in its early stage. It must suffice to refer to a few of those who have aided in the perfection of myomectomy. Emmet working over many

years perfected a method of removing intra-uterine fibroid tumors by making traction upon the tumor, and removing the tumor by cutting it up with scissors. This method was probably the basis from which developed the modern method of morcellement as applied to operations for fibroids. There is the essential difference, however, that while Emmet used the method in the performance of myomectomy, the French school have used it in the performance of hysterectomy.

A. Martin, of Berlin, in 1886 (Diseases of Women, American edition, 1890, p. 280), performed myomectomy for an intra-uterine tumor by the abdominal route. He states: "The great tumor was extruded from above after laparotomy and incision of the uterus. Its bed was cleansed and the uterus sutured. The union and involution of the uterus proceeded in a thoroughly satisfactory manner." This is probably the first case in which a myomectomy was done by the abdominal route for an intra-uterine tumor. Numerous pediculated tumors had been removed by abdominal section, and as early as 1853 Atlee had removed a sessile subperitoneal fibroid tumor by myomectomy (*loc. cit.*, p. 548). Martin has been a constant advocate of myomectomy for intramural fibroids upon the ground of conservatism. His advocacy of myomectomy had less weight than it otherwise would have had, because the results which he obtained were less favorable than those obtained at the same time by the adherents of hysterectomy.

No other surgeon can be specially singled out as having advanced the operation of

myomectomy, but with the perfection of abdominal surgery it became possible to substitute myomectomy for hysterectomy in many cases without increasing the primary mortality of the operation, and with the great gain of conserving the organs of generation. Numerous operators, especially in this country and in Germany, embraced the opportunity to extend the field of conservative surgery. At the present time much thought is being given to the best method for broadening the indication for myomectomy. Early operation for fibroid tumors heretofore has been advocated in order to lessen the mortality of hysterectomy, the basis of its advocacy being that hysterectomy has a lower mortality than fibroid tumors when these are not removed by operation. In estimating the comparative mortality of hysterectomy and fibroid tumors without operation, the fact must not be lost sight of that fibroid tumors are very frequently complicated by other morbid conditions, such as ovarian tumors, pyosalpinx, inflammatory disease of the uterine appendages, necrotic degeneration of the tumors, cystic degeneration, sarcoma, calcareous degeneration, and in a small percentage of cases carcinoma of the body of the uterus or of the cervix is present. The mortality of the complications alone in a given class of cases is greater than the mortality of hysterectomy, leaving aside the inherent mortality due to the tumors themselves.*

*In a study of my own experience in fibroid tumors (The Development and the Present Status of Hysterectomy for Fibromyomata, *Trans. Amer. Gynæc. Soc.*, 1897),

An even stronger ground for the advocacy of early operation is the fact that myomectomy can be much more frequently substituted for hysterectomy. In my own work almost exactly twenty per cent. of the operative cases have been dealt with by myomectomy.

Certain considerations control the indication for myomectomy. The primary purpose of myomectomy is the conservation of the functions of menstruation and procreation, therefore it follows that the age of the patient and the desirability of child-bearing are the main factors in determining the indication for this operation. In women who are approaching the menopause nothing is gained by substituting myomectomy for hysterectomy. Aside from these relative indications the nature of the growth is the absolute indication for or against myomectomy. Typical cases for myomectomy are those in which but a single tumor is present, and favorable cases are those in which the number of tumors is small. When the num-

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among sixty-six cases of fibroid tumor for which hysterectomy was done, the following complications were met with: Cystic degeneration, 3; calcareous degeneration, 3; sarcomatous degeneration, 3; necrosis of the tumor, 2; bilateral hydrosalpinx, 4; unilateral hydrosalpinx, 4; bilateral pyosalpinx, 4; unilateral pyosalpinx, 2; unilateral ovarian cyst, 4; bilateral dermoid ovarian cyst, 1; parovarian cyst, 1; ovarian cyst, ruptured tubal pregnancy, appendicitis, 1; intraligamentous development of the tumor, 6. I reported also three cases of cancer of the cervix complicating fibroid tumors, in which hysterectomy was not performed. Also, of seventeen fibroid tumors which had been removed *per vaginam*, five were necrotic. In my experience about seven per cent. of the fibroid tumors upon which I have operated have been necrotic.

ber of tumors is great, the desirability of the operation becomes less because of the greater technical difficulties of the operation and the increased risk attending it. When the uterus is studded with fibroid tumors, the operation is contraindicated, because of the impossibility of removing all of the growths and the probability that some of those remaining will continue to grow and require subsequent operation.

Myomectomy may be performed either by means of the abdominal or vaginal route. The cases best suited for the abdominal route are subserous and intramural fibroid tumors. When of large size submucous fibroid tumors also are best attacked from above. The essentials for success in myomectomy are perfect asepsis and hemostasis, in addition to a good surgical technique. Operators whose facilities do not afford these requirements should not undertake the operation. The technique of the operation is comparatively simple. The capsule of the tumor is incised and the tumor peeled out from its bed. When the capsule is large, this must be trimmed so as to facilitate the closure of the wound. The wound is then closed by continuous catgut suture, as many tiers of sutures being used as necessary to obliterate the bed of the tumor and to secure perfect hemostasis. The peritoneal covering of the uterus is closed in the usual manner. When the tendency to oozing is marked, the use of mattress sutures is of great service. The ligation of one or more of the four arterial trunks supplying the uterus is admissible when otherwise hemostasis is impracticable.

The use of catgut prepared by the cumol method has given me much satisfaction.

The vaginal route is best adapted to the removal of submucous fibroids, cervical fibroids, and small subserous fibroids situated upon the anterior wall of the uterus. This latter class of fibroids is best attacked by anterior colpotomy. Through the vaginal wound the uterus is anteverted into the vagina, the tumor enucleated, and its bed sutured as in abdominal myomectomy. The vesical peritoneum is then sutured to the uterus above the wound in the uterus, and the vaginal incision closed. Cervical fibroids can be reached by splitting the cervix and enucleating them. Depending upon the location and size of the tumor, the method of operation must be varied in different cases. In some of the cases the anterior lip of the cervix may be split antero-posteriorly, in others the posterior lip. In a number of cases I have split the cervix bilaterally, enucleated the tumor, sutured its bed, and then closed the incisions in the cervix. Submucous fibroids may be reached in two ways. The usual method, and the one which I have employed, it to split the cervix bilaterally up to and beyond the internal os. With care it is possible to avoid wounding the uterine artery and vein. This accident has never happened in my cases. Should it ever occur, the vessels would require ligation as in vaginal hysterectomy. After splitting the cervix the cavity of the uterus can be dilated with dilators, and the tumor seized with vulsellum forceps. If polypoid and of moderate size, it should be drawn down and the pedicle divided with scis-

sors. When of larger size and not polypoid, the capsule must be incised and the tumor enucleated with the finger or some blunt instrument. Tumors of large size are best delivered by traction and morcellation, in accordance with the method advocated by Emmet. The capsule of the tumor left after its removal should be trimmed so far as possible with scissors. In my experience hemorrhage after the removal of fibroid tumors *per vaginam* has been trifling; but should it prove troublesome, it should be controlled by packing the uterus with gauze. It is conceivable that it may be sufficiently troublesome to require hysterectomy. After the removal of the tumor, the cavity of the uterus should be lightly tamponed, and the cervical incision united with catgut sutures reenforced with silkworm-gut, so that the gauze may be removed without risk of tearing open the cervix.

Anterior colpotomy followed by splitting of the anterior wall of the cervix and uterus up to and, if necessary, beyond the reflection of the vesical peritoneum has been recommended as affording ready access to submucous fibroid tumors. I have never employed the method, but theoretically it should afford ready access to intra-uterine tumors. My own experience with splitting the cervix bilaterally has been quite satisfactory, but it is quite apparent that the risk of wounding the uterine vessels is greater by this method than by anterior colpotomy. On the other hand, anterior colpotomy presents the objection that there is more likelihood of invading the peritoneal cavity by this method.

My own experience with myomectomy embraces twenty-five cases, in eight of which the operation was done by abdominal section, and in seventeen *per vaginam*. All of the patients made good recoveries. In none of the cases so far as known have fibroid nodules developed since operation. Three of the patients are known to have become pregnant and given birth to children since their operations. One patient gave birth to twins.

The results of myomectomy in my hands have been most satisfactory. The primary mortality has been *nil*, the recovery from operation in almost all cases has been uncomplicated, and the result of the operation has been satisfactory in every case. A number of the patients were extremely ill when operated upon, due to long-continued hemorrhages and to infection or sloughing of the tumor brought about by the efforts of the uterus to expel the tumor *per vias naturales*. Three of these patients were dangerously ill from anemia and septicemia. It cannot be expected that a *nil* mortality will be obtained in a large series of cases of myomectomy, but the mortality should be lower than that of hysterectomy for fibroids. Cases suitable for myomectomy on the whole are more favorable for operation than the average cases of fibroid tumor. Cases suitable for hysterectomy include all the cases having serious complications. Cases suitable for myomectomy are seldom in desperate condition, the exceptions being those suffering from severe anemia due to long-continued hemorrhages or to infection of intra-uterine fibroid tumors.

In conclusion, I wish once more to express the opinion that the next advance in the treatment of fibroid tumors will be the general adoption of early operation and the more general substitution of myomectomy for hysterectomy as being the most conservative treatment of these growths.